

Amendments to the Specification

Please replace the paragraph beginning at page 2, line ²²~~21~~ with the following rewritten paragraph:

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The scattered rays have a curved shape in said volume. Taking the curved shape of the scattered rays into account for the back projection ~~in conformity with claim 2~~ enhances the quality of the reconstructed scatter intensity distribution.

Please replace the paragraph beginning at page 2, line 25 with the following rewritten paragraph:

According to the ~~a~~ preferred reconstruction method ~~disclosed in claim 3~~ the measuring values are weighted prior to the back projection. Such weighting takes into account the fact that the effectiveness of the detector surface decreases as the scatter angle increases and also that the radiation density decreases as the distance between the point of incidence of the scattered ray on the detector unit and the scatter center increases. The effective detector surface is the detector surface projected in a plane perpendicular to the path of the detected ray. ~~The~~ In another embodiment, ~~weighting in claim 4~~ takes into account the fact that the radiation density decreases as the distance between the radiation source and the scatter center increases. The quality of the reconstructed scatter intensity distribution is enhanced when such effects are taken into account.

Please replace the paragraph beginning at page 3, line 1 with the following rewritten paragraph:

~~Claim 5-Another embodiment~~ describes a preferred reconstruction method which requires less calculation work in comparison with other methods and offers a favorable image quality nevertheless.